



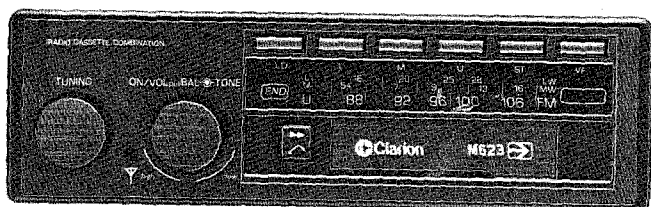
Clarion Co., Ltd.

Export Division—22-3, Shibuya 2-chome, Shibuya-ku, Tokyo, 150 Japan

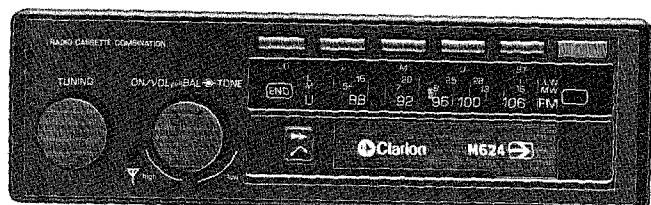
Tel: 03-400-1121 Fax: 03-400-8679 Telex: J22908, J22152

Service Dept.—50 Kamitoda, Toda-shi, Saitama, 335 Japan Tel: 0484-43-1111 Telex: J2962628 CLAFAC-J

Service Manual



M623



M624

LW/MW/FM

Stereo Cassette Receiver

Model **M623** (PE-6006C)
M624 (PE-6007C)

SPECIFICATIONS:

Radio section

Circuit system: Superheterodyne
Tuning system: Manual μ -tuning
Receiving frequency: LW 155kHz to 281kHz
MW 531kHz to 1,602kHz
UKW(FM) 87.5MHz to 104MHz

Intermediate frequency:
LW, MW 460kHz
UKW(FM) 10.7MHz

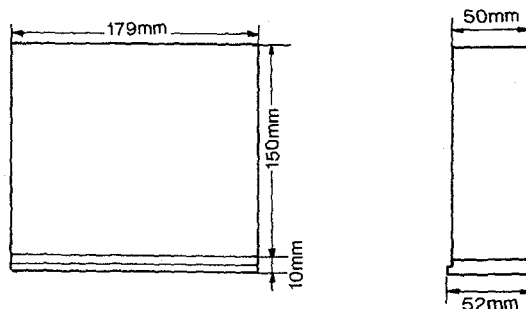
Tape section

Reproduction system: 4 track, 2 channel, 2 program stereo cassette tape playback
Tape speed: 4.76cm/sec. (1 $\frac{7}{8}$ ips)

Composite

Speaker impedance: $4\Omega \times 2$
Power output: $4.5W \times 2$
(at 10% distortion TYP.)
More than $8.0W \times 2$
(at max. output TYP.)
Power supply voltage: DC 14.4V(10.8V to 15.6V)
Negative ground
Power consumption: Less than 3A
(at max. output)

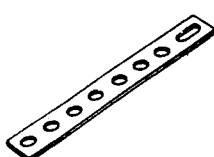
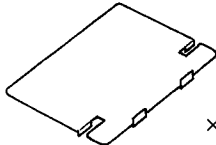
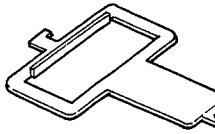
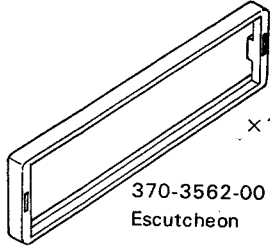
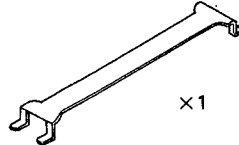
Dimensions:



Weight: 1.15kg

COMPONENTS VIEW:

- M623 (PE-6006C-A)
- M624 (PE-6007C-A)

Main unit	1	Parts bag	921-7910-00	1
Mounting bracket	300-6953-00	1		
Mounting bracket	300-4976-00	1		
		 330-7672-01 Lock plate x1		
 330-7673-00 Hook plate x2		 345-2934-00 Cushion x1		
 370-3562-00 Escutcheon x1		 345-3653-01 Spacer x1		
		 820-0050-04 Vinyl tube x1		
		 725-0181-00 Plate nut x1		
		 740-5000-10 Flat washer x1		
		 722-0314-00 Nut x1		
		 700-5016-10 Tap screw x1		
		 330-7759-00 Hold plate x1		

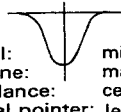
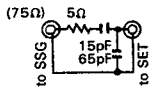
FEATURES:

- MW/LW/UKW(FM)-MPX radio with 1-way stereo cassette player (FF lock).
- Provided radio traffic information (VF) system (M623)

- Super SASC (Signal Actuated Stereo Control) circuit system.
- Loudness circuit built-in.
- FEC mechanism.

ADJUSTMENTS:

MW, LW CIRCUIT

Item	Input	Output	Frequency	Method of adjustment	Instruments required	Remarks
IF	TP51	TP52	460kHz	IFT2 and IFT3	Adjust the cores of IFT maximum wave-form height with good symmetry.	● Sweep generator ● Oscilloscope  Vol: minimum Tone: maximum Balance: center Dial pointer: left end
Tracking (MW)	Antenna receptacle	Meter across the speaker voice coil	510kHz	L4	Adjust the coil for maximum indication of V.T.V.M.	 Use dummy antenna between S.S.G. and antenna receptacle.
Tracking (LW)			145kHz 320kHz	L5 CT-2	Adjust the coil & trimmer for maximum indication of V.T.V.M.	
Antenna trimmer	Receive white noise	Speaker	1,400kHz	TC101	Adjust the trimmer so that the noise output becomes maximum.	● Speaker  TC101 Ant. trimmer

- SPECIFICATION —LIMIT— Quieting sensitivity : MW Less than 33dB (at 20dB S/N)
LW Less than 43dB (at 20dB S/N)

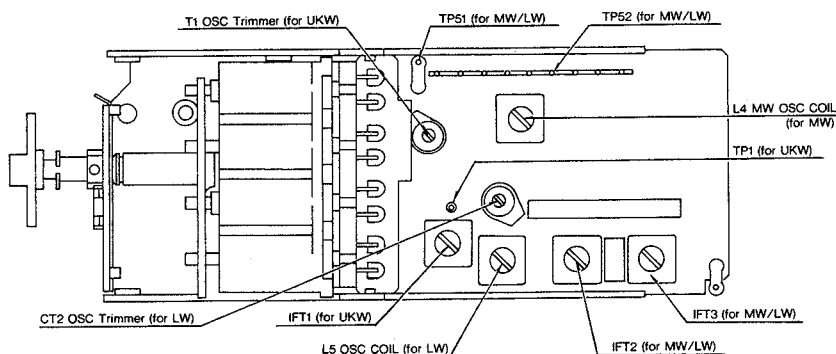
UKW(FM) CIRCUIT

Item	Input	Output	Frequency	Method of adjustment		Instruments required	Remarks
S-curve	TP1 (Tuner pack)	TP2	10.7MHz	IFT1 and IFT102	Adjust the cores for wave-form having good symmetry and good linearity.	● Sweep generator ● Oscilloscope	 ● Ground pin 6 of IC101 (LA1140)
Tracking	Antenna receptacle	Meter across the speaker voice coil	87.5MHz	T-1 (OSC trimmer)	Adjust the trimmer for maximum indication of V.T.V.M.	● Dummy load (4Ω) ● V.T.V.M. ● S.S.G.	
<MPX> (VCO)		TP6	98MHz 55dB No modulation	Connect a frequency counter to TP.6 via a 100kΩ resistor and adjust VR103 to 76kHz.		● S.S.G. ● Frequency counter	"ST" ON
Separation		Meter across the speaker voice coil	Right or left signal (400Hz)	VR102	Adjust the VR for maximum separation.	● Stereo SG (98MHz, 65dB) ● S.S.G.	"ST" ON
SASC circuit	Set to the specified modulation (30%), assuming an UKW SSG output 55dB, modulation frequency 7kHz. Set the output level to 0dBm (=0.775V) using the volume control. Set the UKW SSG output to 38dB and adjust VR101 so that the output level is 3dB down. "ST" ON						
SK (M623)	1. Connect a Millivoltmeter to TP4 and adjust L101 to peak voltage. (98MHz, 55dB) 2. Connect a frequency counter to TP3, and adjust VR104 to 57kHz. (98MHz, 0dB)						
DK (M623)	Connect a frequency counter to TP5, and adjust VR105 to 125Hz.						

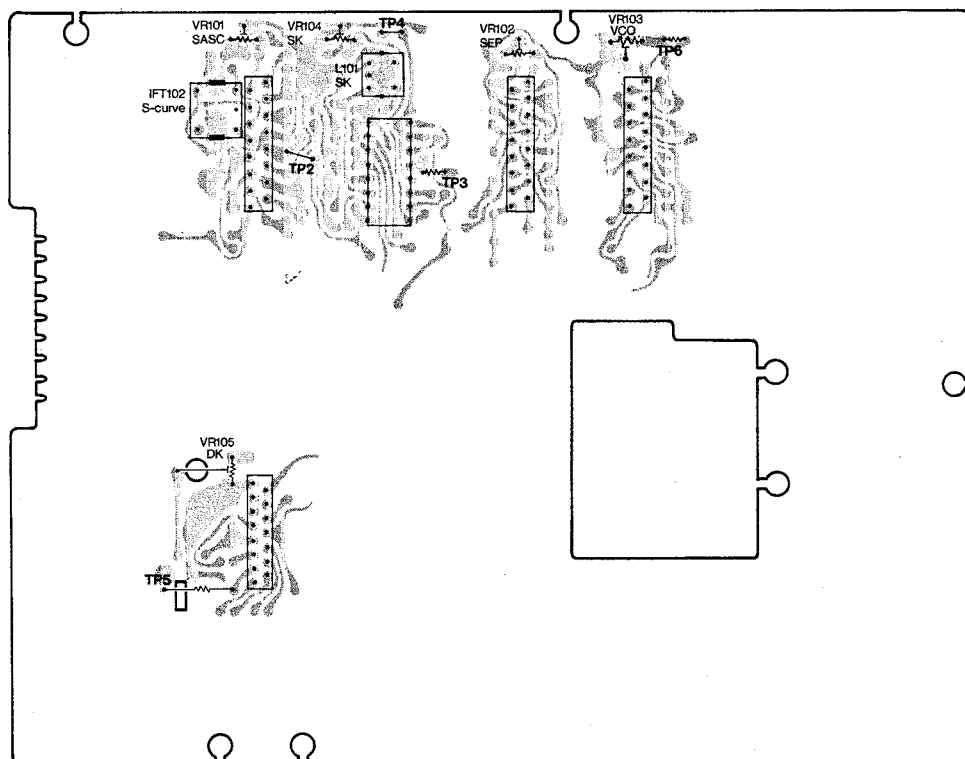
[NOTE] After the adjustment of frequency range, be sure that:
 (1) Band edge frequency of LW shall be 148.5kHz —20kHz

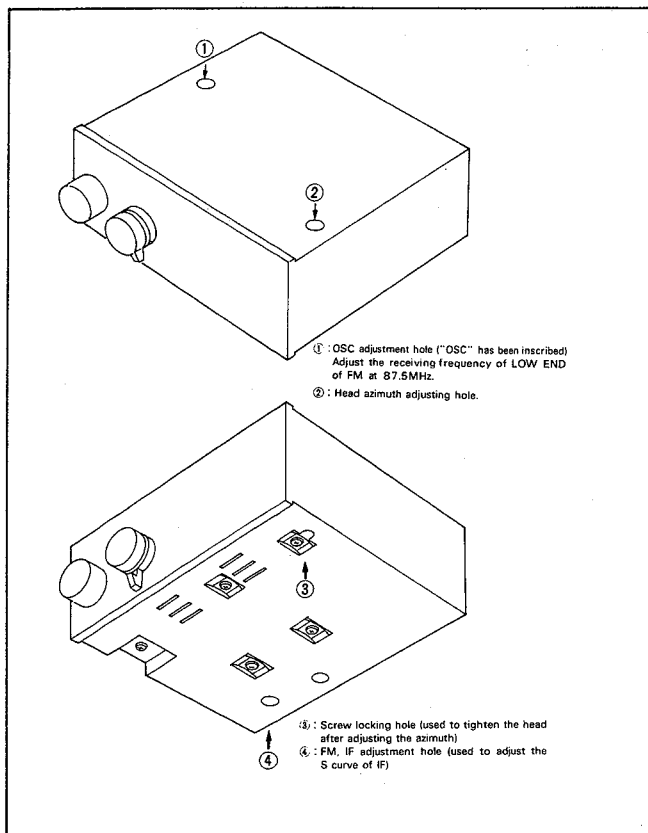
(2) Band edge frequency of UKW shall be 87.5MHz +100kHz —160kHz
 at low end. And shall be lower than 108.16MHz at upper end.

- SPECIFICATION —LIMIT— Quieting sensitivity : Less than 12dB (at 30dB S/N)
 Stereo separation : More than 20dB



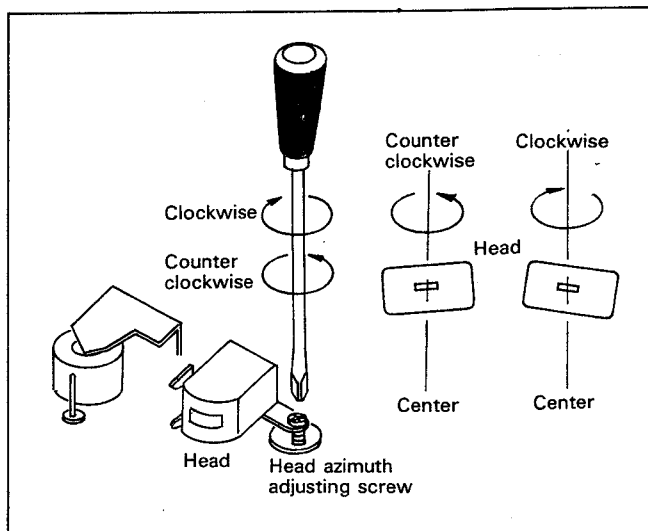
● ADJUSTMENT POINT





■ HEAD AZIMUTH ADJUSTMENT:

Play the test tape 6.3kHz, -10VU and adjust by turning the head azimuth adjusting screw so that the output level becomes close to maximum.



● SPECIFICATION —LIMIT—

Wow and flutter : Less than 0.25%(W.R.M.S)

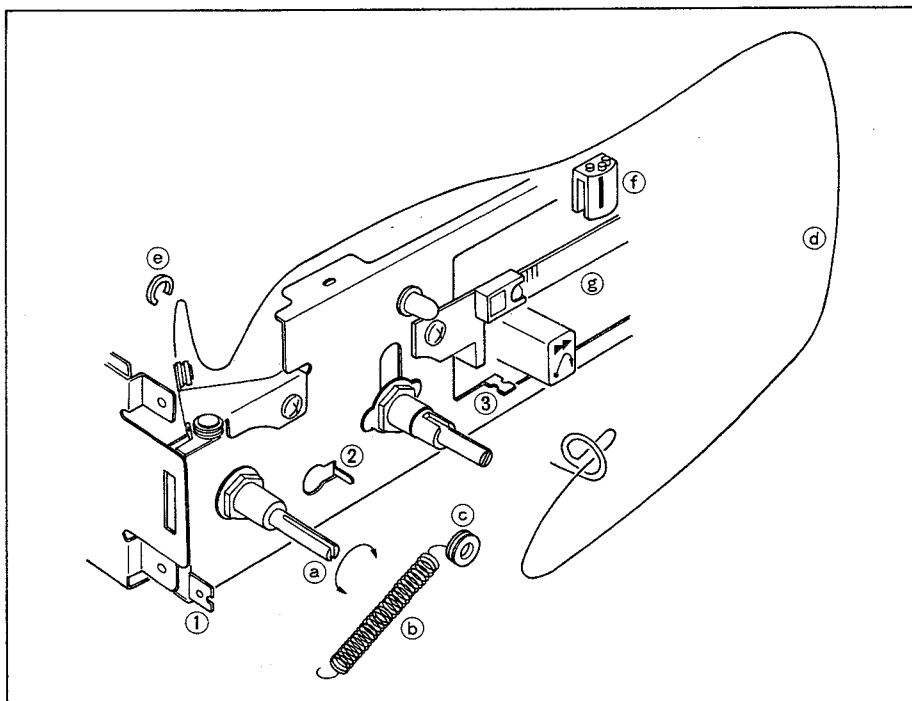
■ DIAL CORD STRINGING:

Threading Procedure

1. Turn the tuning shaft ① clockwise to its full position.
2. Mount the pulley ② at one end of the spring ③, insert another end in the hook ① of the lower case, and insert the hole of the pulley ② in the hook ②.
3. Connect one end of the dial cord ④ to the hook ③, hang the string sequentially, and fix the string to the tuner shaft by the use of the

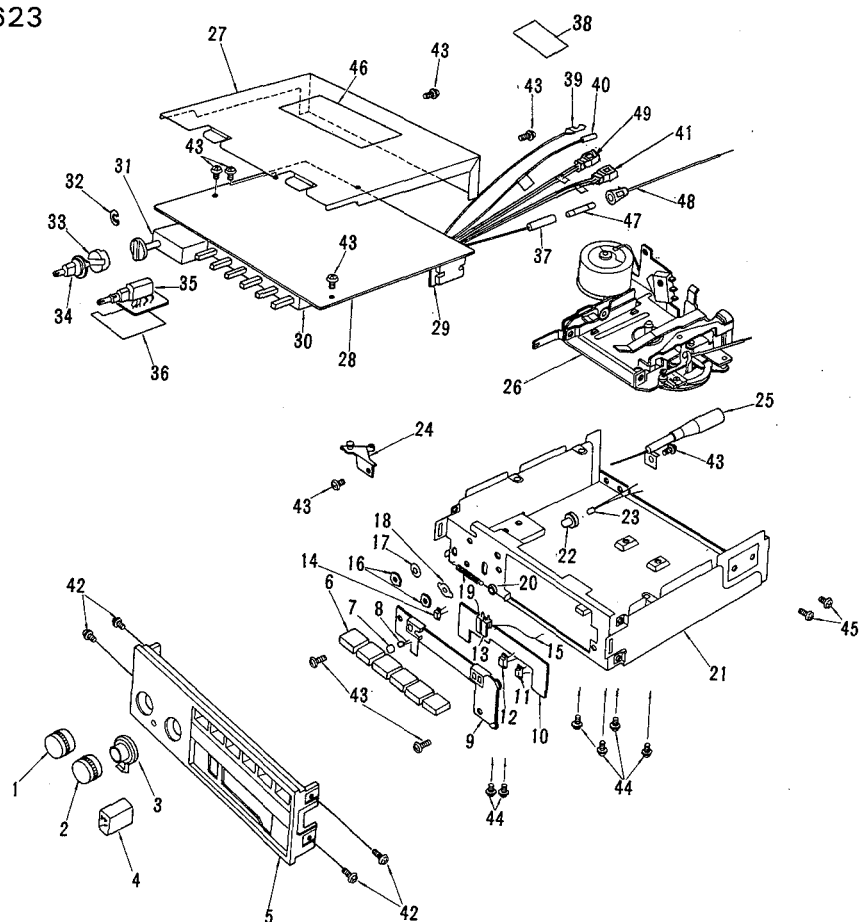
c-ring ⑤. At the time, make sure that the string is not loosened

4. Dismount the pulley ② from the hook ②.
5. Mount the dial pointer ⑥ on the back plate ⑦ and hung the dial cord ④.
6. Turn the tuning shaft ① counterclockwise to its full position and set the left end of the dial pointer ⑥ to the marking inscribed on the back plate.



EXPLODED VIEW • PARTS LIST:

©Main section M623

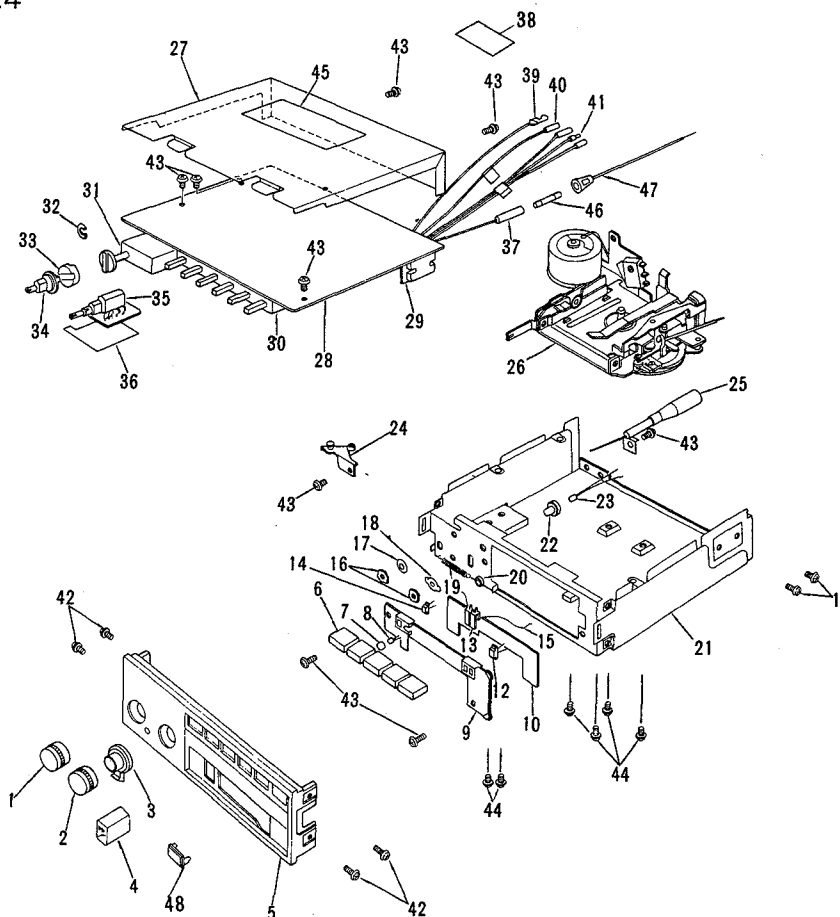


REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
1	380-4296-00	Knob (TUNING)	1
2	380-4297-00	Knob (VOL)	1
3	380-4298-00	Knob (TONE)	1
4	98637-001-0	Button (EJECT)	1
5	98870-003-0	Escutcheon ass'y	1
6	382-0515-00	Button	6
7	345-2830-23	P.L. cap	1
8	017-0349-04	Pilot lamp	1
9	98633-001-0	Back plate	1
10	98509-001-0	P.W.B.	1
11	001-0312-02	LED (Yellow)	1
12	001-0312-01	LED (Red)	1
13	376-0888-00	Dial pointer	1
14	001-0312-03	LED (Orange)	1
15	830-0600-83	Dial cord	1
16	722-0231-00	Hexagon nut (M9x0.75)	2
17	745-0430-01	Flat washer (M9)	1
18	330-7677-00	Lock plate	1
19	750-2175-00	Spring	1
20	335-0894-00	Pully	1
21	98652-001-0	Lower case	1
22	345-3621-00	P.L. cap	1
23	017-0340-00	Pilot lamp	1
24	330-7676-00	Cord holder	1
25	092-0522-00	Antenna receptacle	1

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
26	930-0484-03	Tape mechanism	1
27	98651-001-0	Upper case	1
28	98509-002-1	P.W.B.	1
29	944-0653-00	Filter ass'y	1
30	013-3691-00	Switch (6-key)	1
31	941-0120-00	Tuner pack	1
32	746-0668-01	Lock washer	1
33	335-1536-00	Oldham jointer	1
34	961-0116-00	Tuning shaft ass'y	1
35	012-4074-00	Variable resistor	1
36	347-1214-00	Insulator	1
37	850-1822-00	A-lead	1
38	98620-011-0	Set plate	1
39	840-0386-00	Bonding wire	1
40	852-6652-01	Extension lead	1
41	851-2665-01	Speaker lead R	1
42	731-3006-89	Tap tight (M3x6)	4
43	731-3006-80	Tap tight (M3x6)	9
44	714-3003-81	Machine screw (M3x3)	6
45	714-3010-81	Machine screw (M3x10)	2
46	285-0915-00	Guide label	1
47	120-0030-00	Fuse (3A)	1
48	850-1844-01	A-lead	1
49	851-2665-00	Speaker lead L	1

EXPLODED VIEW • PARTS LIST:

©Main section M624

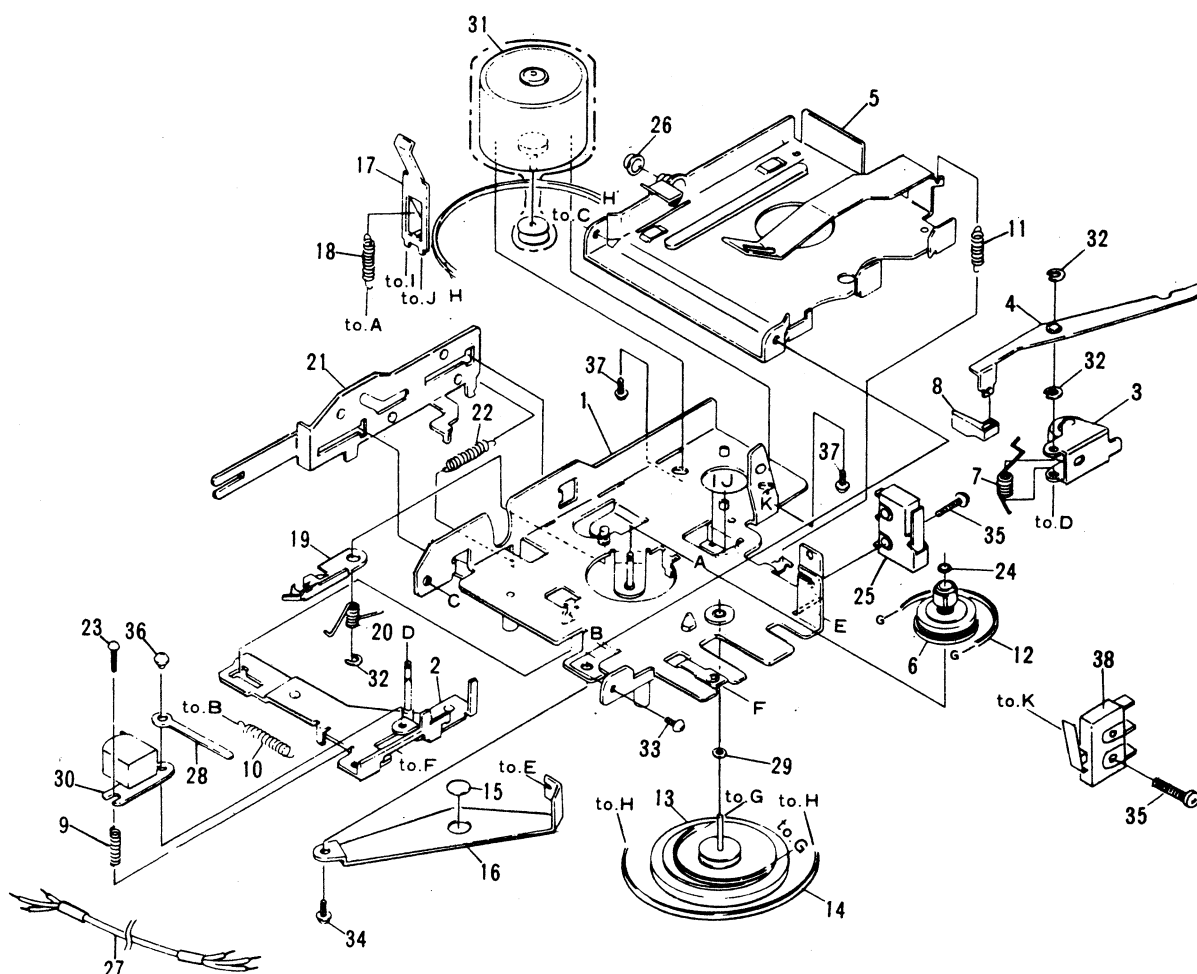


REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
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2	380-4297-00	Knob (VOL)	1
3	380-4298-00	Knob (TONE)	1
4	98637-001-0	Button (EJECT)	1
5	98870-004-0	Escutcheon ass'y	1
6	382-0515-00	Button	6
7	345-2830-23	P.L. cap	1
8	017-0349-04	Pilot lamp	1
9	98633-001-0	Back plate	1
10	98509-001-0	P.W.B	1
11	714-3010-81	Machine screw (M3x10)	2
12	001-0312-01	LED (Red)	1
13	376-0888-00	Dial pointer	1
14	001-0312-03	LED (Orange)	1
15	830-0600-83	Dial cord	1
16	722-0231-00	Hexagon nut (M9x0.75)	2
17	745-0430-01	Flat washer (M9)	1
18	330-7677-00	Lock plate	1
19	750-2175-00	Spring	1
20	335-0894-00	Pully	1
21	98652-001-0	Lower case	1
22	345-3621-00	P.L. cap	1
23	017-0340-00	Pilot lamp	1
24	330-7676-00	Cord holder	1

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
25	092-0522-00	Antenna receptacle	1
26	930-0484-03	Tape mechanism	1
27	98651-001-0	Upper case	1
28	98509-002-1	P.W.B	1
29	944-0653-00	Filter ass'y	1
30	013-3690-00	Switch (6-key)	1
31	941-0120-00	Tuner pack	1
32	746-0668-01	Lock washer	1
33	335-1536-00	Oldham jointer	1
34	961-0116-00	Tuning shaft ass'y	1
35	012-4074-00	Variable resistor	1
36	347-1214-00	Insulator	1
37	850-1822-00	A-lead	1
38	98620-002-0	Set plate	1
39	840-0386-01	Bonding wire	1
40	852-6652-00	Extension lead	1
41	851-2057-05	Speaker lead	1
42	731-3006-89	Tap tight (M3x6)	4
43	731-3006-80	Tap tight (M3x6)	9
44	714-3003-81	Machine screw (M3x3)	6
45	285-0915-00	Guide label	1
46	120-0030-00	Fuse (3A)	1
47	850-1844-01	A-lead	1
48	98663-001-0	Dummy button	1

■EXPLODED VIEW • PARTS LIST:

◎Tape mechanism section

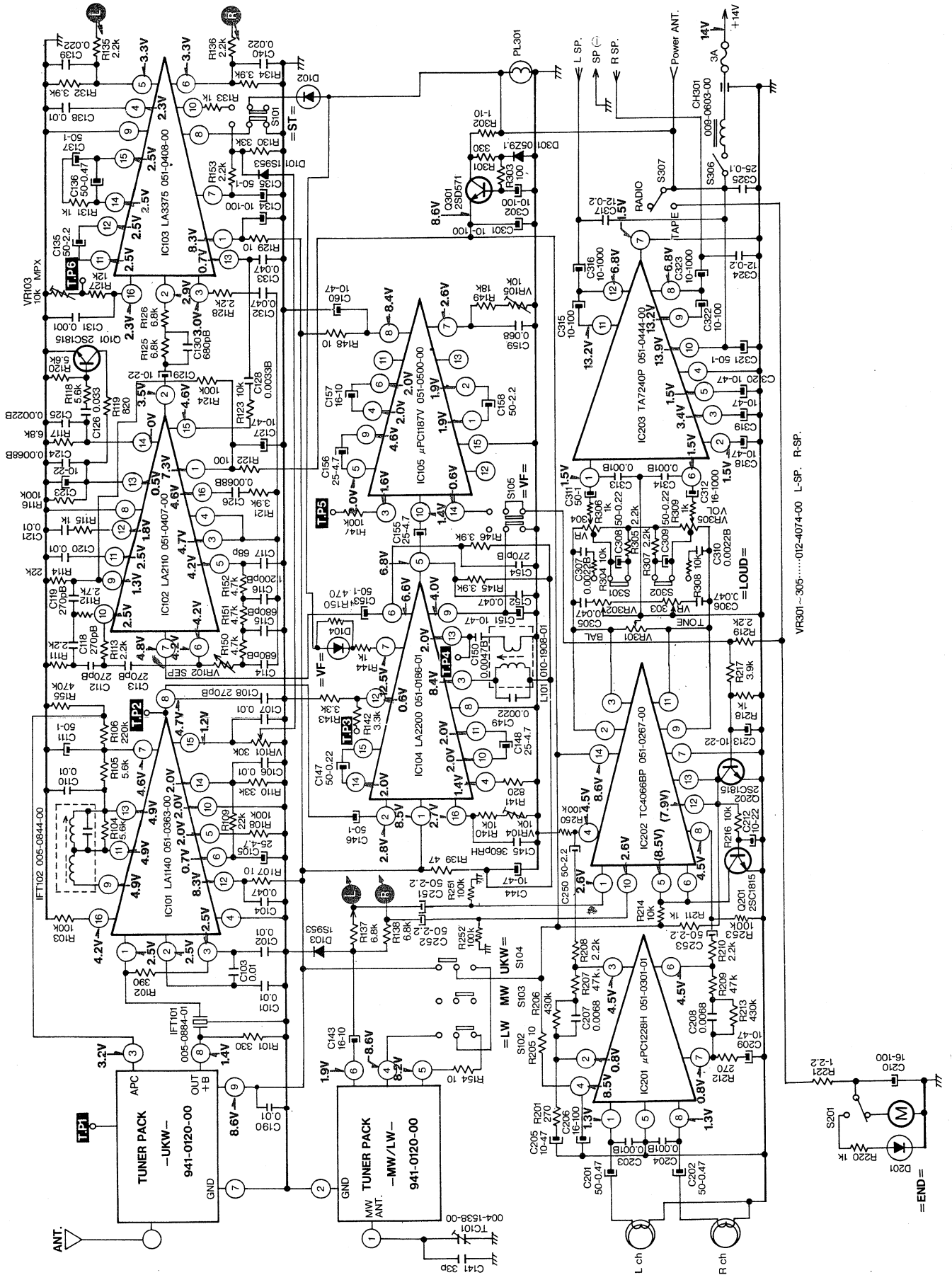


REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
1	960-3302-00	Deck plate ass'y	1
2	960-3225-01	Head plate ass'y	1
3	960-3229-00	Roller ass'y	1
4	960-3227-01	S-lever ass'y	1
5	960-3226-02	Pack guide ass'y	1
6	960-3228-00	Reel base ass'y	1
7	750-1986-00	Spring	1
8	631-0332-00	Sensor	1
9	750-1987-00	Spring	1
10	750-1988-01	Spring	1
11	750-1989-01	Spring	1
12	602-0053-00	Belt	1
13	611-0059-00	Flywheel	1
14	602-0063-00	Belt	1
15	631-0222-00	Thrust plate	1
16	630-1261-00	Flywheel plate	1
17	630-1260-01	Eject plate	1
18	750-2097-00	Spring	1
19	630-1360-00	Lock cam	1

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
20	750-2098-01	Spring	1
21	630-1358-00	Eject lever	1
22	750-2099-01	Spring	1
23	716-0384-00	Screw (M2x8)	1
24	746-0628-01	Flat washer	1
25	013-3505-00	Switch	1
26	632-0999-00	Guide roller	1
27	815-1896-00	Head lead	1
28	330-4896-00	Lead clamp	1
29	746-0624-00	Flat washer	1
30	011-0265-01	Head	1
31	960-3292-00	D.C motor ass'y	1
32	743-2000-10	E-ring (M2)	3
33	714-3003-11	Machine screw (M3x3)	1
34	731-2605-81	Tap tight (M2.6x5)	1
35	716-0438-00	Machine screw (M2.3x8.5)	2
36	714-2003-81	Machine screw (M2x3)	1
37	732-2604-11	Sems screw (M2.6x4)	2
38	013-2690-02	Switch	1

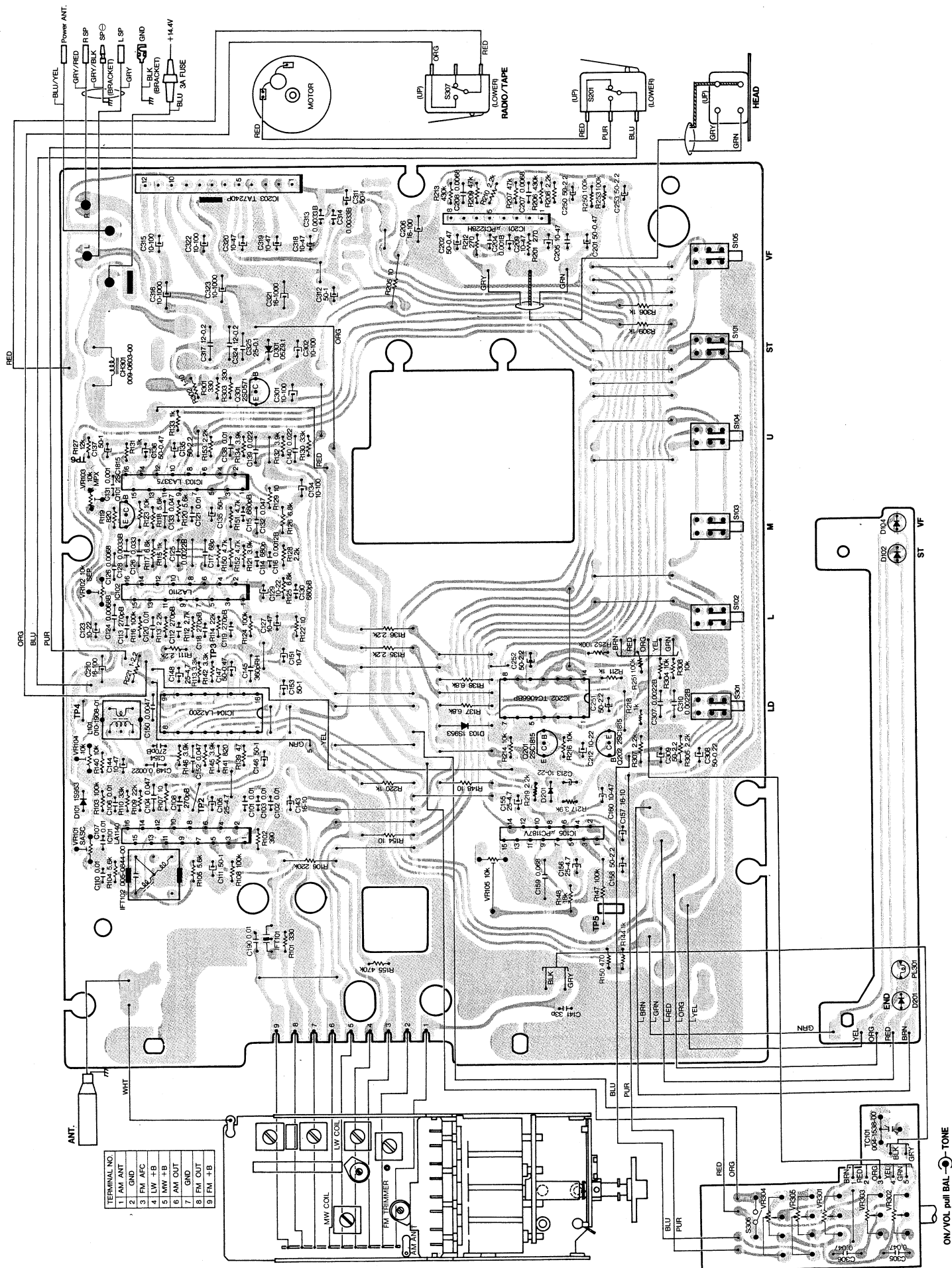
CIRCUIT DIAGRAM:

©M623



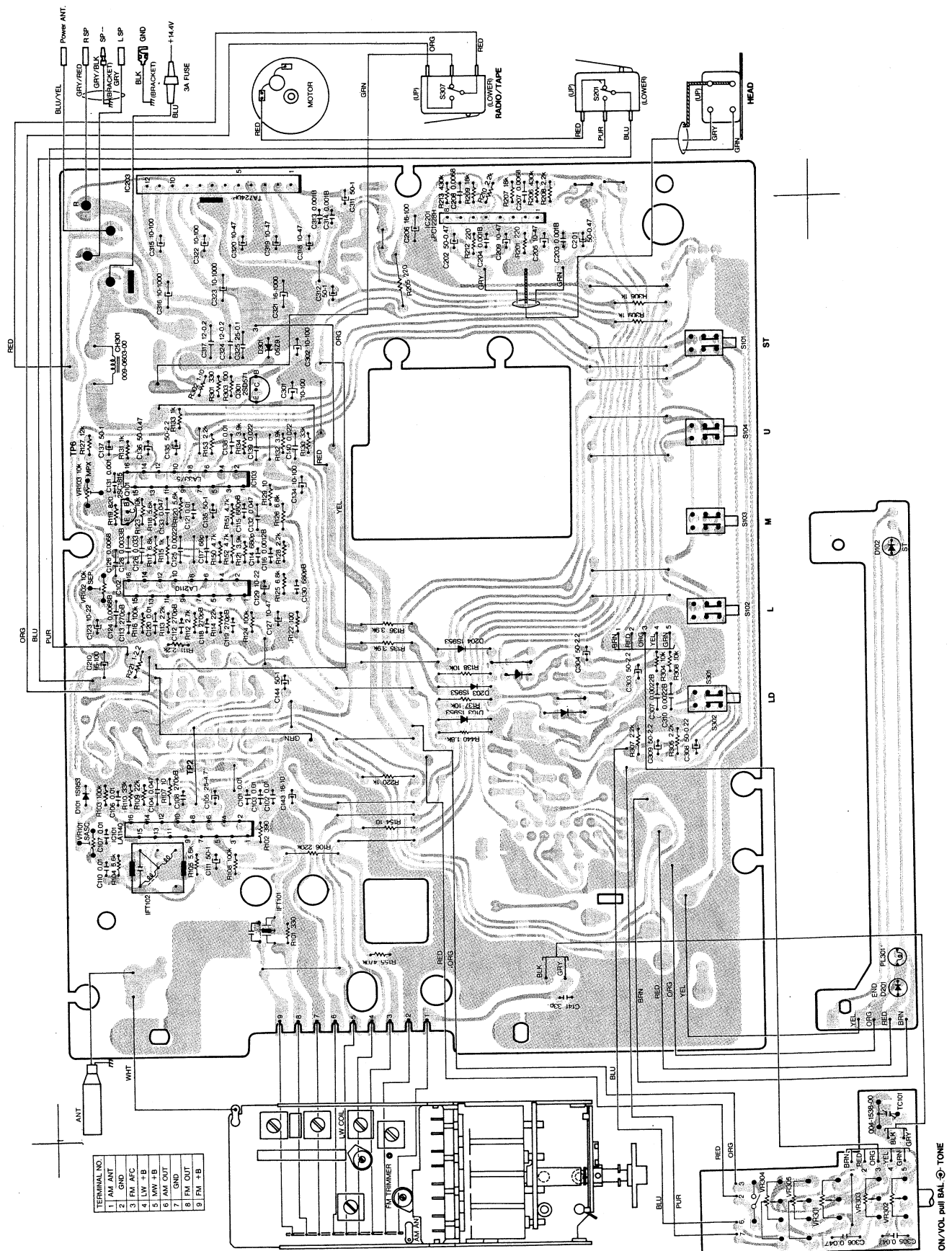
PRINTED WIRING BOARD:

©M623



PRINTED WIRING BOARD:

©M624



PARTS LIST:

NOTE : ☐ is use only M623
☐ is use only M624

⊙Electrical section

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
D ^{101,103} _{202 203 204 205}	001-0151-00	Diode (1S953)	³ ₆
D ₃₀₁	001-0169-05	Diode (05Z9.1)	1
TC ₁₀₁	004-1538-00	Trimmer	1
IFT ₁₀₂	005-0844-00	IF-transformer	1
IFT ₁₀₁	005-0884-01	IF-transformer	1
CH ₃₀₁	009-0603-00	Choke	1
L ₁₀₁	010-1908-01	Coil	¹
VR ₁₀₅	012-2740-00	Variable resistor (10k Ω)	¹
VR _{102,103,104}	012-3170-02	Variable resistor (10k Ω)	3
VR ₁₀₁	012-3170-04	Variable resistor (30k Ω)	1
R ₁₄₂	032-0059-47	Film resistor ($\frac{1}{4}$ Ws3.3k Ω)	1
R ₁₂₇	032-0059-51	Film resistor ($\frac{1}{4}$ Ws12k Ω)	1
C _{317,324}	043-0020-01	Ceramic capacitor (12V0.2 μ F)	2
IC ₁₀₄	051-0186-01	IC (LA2200)	¹
IC ₂₀₂	051-0267-00	IC (TC4066BP)	¹
IC ₂₀₁	051-0301-01	IC (μ PC1228H)	1
IC ₁₀₁	051-0363-00	IC (LA1140)	1
IC ₁₀₂	051-0407-00	IC (LA2110)	1
IC ₁₀₃	051-0408-00	IC (LA3375)	1
IC ₂₀₃	051-0444-02	IC (TA7240AP)	1
IC ₁₀₅	051-0500-00	IC (μ PC1187V)	¹
Q ₁₀₁ _{201 202}	102-1815-25	Transistor (2SC1815Y)	³ ₁
Q ₃₀₁	103-0571-12	Transistor (2SD571L)	1
R ₃₀₂	114-1001-52	Film resistor (1W10 Ω)	1
R ₂₂₁	114-2291-52	Film resistor (1W2.2 Ω)	1
C ₁₃₁	141-1022-10	Polyester capacitor (50V0.001 μ F)	1
C ₁₄₉	141-2222-10	Polyester capacitor (50V0.0022 μ F)	¹
C _{207,208}	141-6822-10	Polyester capacitor (50V0.0068 μ F)	2
C ₁₅₉	141-6832-10	Polyester capacitor (50V0.068 μ F)	¹

C ^{203,204} _{812 813}	160-1022-05	Ceramic capacitor (1000pF)	⁴ ₂
C ₁₁₆	160-1222-05	Ceramic capacitor (1200pF)	1
C _{125,307,310}	160-2222-05	Ceramic capacitor (2200pF)	3
C ^{108,112,113,118} _{119 154}	160-2712-05	Ceramic capacitor (270pF)	⁶ ₅
C ₁₂₈ _{313 314}	160-3322-05	Ceramic capacitor (3300pF)	¹ ₃
C ₁₅₀	160-4722-05	Ceramic capacitor (4700pF)	1
C _{114,115,130}	160-6812-05	Ceramic capacitor (680pF)	3
C _{124,126}	160-6822-05	Ceramic capacitor (6800pF)	2
C ^{101,102,103,106} _{107 110,120,121 136}	171-1033-06	Ceramic capacitor (25V0.01 μ F)	9
C ₃₂₅	171-1043-06	Ceramic capacitor (25V0.1 μ F)	1
C _{139,140}	171-2233-06	Ceramic capacitor (25V0.022 μ F)	2
C ₁₂₆	171-3333-06	Ceramic capacitor (25V0.033 μ F)	1
C ^{104,132,133,152} _{305,306}	171-4733-06	Ceramic capacitor (25V0.047 μ F)	6
C ₁₄₁	174-3300-13	Ceramic capacitor (33pFCH)	1
C ₁₄₅	174-3610-37	Ceramic capacitor (360pFRH)	¹
C ₁₁₇	174-6800-46	Ceramic capacitor (68pFSL)	1
C ^{111,135,137} _{133 311,312 446}	179-1053-62	Electrolytic capacitor (50V1 μ F)	⁷ ₅
C _{316,323}	179-1083-23	Electrolytic capacitor (10V1000 μ F)	2
C _{136,201,202}	179-4743-62	Electrolytic capacitor (50V0.47 μ F)	3
C _{205,209}	179-4763-22	Electrolytic capacitor (10V47 μ F)	2
C ₁₄₃ ₁₅₇	180-1064-32	Electrolytic capacitor (16V10 μ F)	² ₁
C ^{134,301,302,315} ₃₂₂	180-1074-22	Electrolytic capacitor (10V100 μ F)	5
C _{206,210}	180-1074-32	Electrolytic capacitor (16V100 μ F)	2
C ₃₂₁	180-1084-32	Electrolytic capacitor (16V1000 μ F)	1
C ¹³⁵ _{251 158 250 252 253 303 304}	180-2254-62	Electrolytic capacitor (50V2.2 μ F)	⁶ ₃
C _{123,129,212,213}	180-2264-22	Electrolytic capacitor (10V22 μ F)	4
C _{105,148,155,156}	180-4754-42	Electrolytic capacitor (25V4.7 μ F)	4
C ¹²⁷ _{318,319,320 445 451 460}	180-4764-22	Electrolytic capacitor (10V47 μ F)	⁷ ₁₄
C ₁₄₇ _{308,309}	181-2243-62	Electrolytic capacitor (50V0.22 μ F)	³ ₂

TUNER PACK: (INNER CIRCUIT)

